Work Orde		664		*756	364*				•			Page 1
Revision ID:	D407-667-2			Accept	*N900	<u>)</u> 040	100)*	Setup	Start Stop	*N: *N:	S1* S2*
•	27/10/2011 11/11/2011	Start Qty: 1.00 Req'd Qty: 1.00	*1* *1*		Cust Item Customer							
Approvals:		an: M.C.J	Date: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			Date:			Run	Start Stop	*NI *NI	R1* R2*
Sequence ID/ Work Center ID)	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Rej Qty		Reject Number	Insp. Stamp
Draw Nbr	Rev	vision Nbr										
D407-667-245	Rev	F/DEO		·								
*100 *100* DC Document Control		DOCUMENT CONTRO Memo Photocopy	DL bluefile and create labels as	0.00 0.00 s per PPP D407-667-205				_ <i>m</i>	/ Co	12 4 M	03 LJ 17	23 (1) 2-3-23
110		Pick Kit		0.00	——·)		,	7	7	- 28	,
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Packaging Packaging		Мето		0.00								
120		BENDING MACHINE	- CROSSTUBES	0.00		TT.			1	7 - 5	Z-Z,	\$
120 CNC Bend I CNC Delta 100 Bend	der ·	Memo	e as per Dwg D407-667-24	0.00 5 using CNC bender prog	gram 407 Aft and	74	Bon					<u> </u>
		D407-	667-20	5/	B 756	64	Walt traples of the					

W/O:			W	ORK ORDER CHANG	SES	***************************************			
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Part No);	PAR #:	Fault Cate	gory:	_ NCR: Yes	No DQA :		_ Date:	
NCR:		esolution:		ER NON-CONFORM				_ Date: _	
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DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Verificat Section (Approval Chief Eng	Approval QC inspector

Work Order ID 75664 *75664* Page 2 October-27-11 2:46:30 PM D407-667-205 Accept * Item ID: *N900040100* Setup Start **Revision ID:** Item Name: Crosstube Aft Start Qty: 1.00 **Start Date:** 27/10/2011 **Cust Item ID: Required Date:** 11/11/2011 **Req'd Qty:** 1.00 **Customer:** Reference: Run Date: **Tooling:** Approvals: Process Plan: Date: Stop QC: _____ Date: SPC (Y/N): Date: Sequence ID/ Tool # Plan **Operation** Set Up/ Tool ID Accept Reject Reject Insp. **Work Center ID** Description **Run Hours** Code Qty Qty Number Stamp 130 QC15- Crosstube Dimensional Check 0.00 *130* 8,2/02/29

J.,

QC

Quality Control

Memo

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W/O:			W	ORK ORDER CHANG	ES		*		
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75664

Page 3

October-27-11 2:46:30 PM

Required Date: 11/11/2011

Item ID:

D407-667-205

Accept

N900040100

Setup

Start

Revision ID:

Item Name: Start Date:

Crosstube Aft

27/10/2011

Start Qty: 1.00

Req'd Qty: 1.00

Date:

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Reference:

Approvals:

Process Plan:

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Tooling: SPC (Y/N):

Date: Date: Run

Start

Stop

Sequence ID/ **Work Center ID**

140

140

Crosstubes Crosstubes

Operation **Description**

Crosstubes

QC:

Set Up/ **Run Hours** **Tool ID**

Tool # Plan

Code

Accept **Qty**

Reject Oty

Reject

Insp. Number Stamp

Memo

1-Drill pilot holes in tube using drill Jig DT8583 & DT8584 as per Dwg D407-667-245. Drill all (3) top holes.

2-Drill and Ream all holes in tube to finish size using drill Jig DT8583 & DT8584 as per Dwg D407-667-245Check dimensions between holes on all four sides.

3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.

4-Drill pilot holes using drill Jig DT8583 & DT8584 as per Dwg D407-667-245. Drill only the top (2) holes.

5-Drill & ream the top (2) holes to finish size using drill Jig DT8583 & DT8584 as per Dwg D407-667-245

6-Drill Aft rivet holes using drill Jig DT8789 as per Dwg D407-667-245. Note: Aft side has 3x top holes.

7-Drill Fwd rivet holes using drill Jig DT8789 as per Dwg D407-667-245. Drill only the top (3) holes. .

8-C'sink holes as per Dwg D407-667-245. Allow rivet to sit below surface to compensate for paint.

9- Scribe tube to identify on the inner chamfer in the cuff D# and B#

10-Deburr & Inspect for surface damage. Repair damage within limits as per

	. Johnso .							
W/O:			WC	RK ORDER CHANGE	S			
DATE	STEP		OCEDURE CHA	NGE	Ву	Date (Approval Chief Eng / Prod Mgr	Approval QC Inspector
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DATE	STEP	Description of NC Section A	Initial	Corrective Action Section Action Description	Sign 8			Approval QC Inspector
			Chief Eng	Chief Eng	Date		J Giller Eng	de inspeciei

Work Orde		664			*756	664*					-		Page 4
Item ID: Revision ID:	D407-667-20				Accept	*N900	<u>)</u> 040	100)*	Setup	Start Stop		S1*
Item Name: Start Date: Required Date: Reference:	Crosstube Aft 27/10/2011 11/11/2011	Start Qty: 1.00 Req'd Qty: 1.00		1* 1*		Cust Item Customer:						"IN	S2*
Approvals:	Process Pla	n:	Date:		Tooling: SPC (Y/N):	_	Pate:			Run	Start Stop	*N *N	R1* R2*
Sequence ID/ Work Center II)	Operation Description Dwg D407-0	667-245		Set Up/ Run Hours	Tool ID	Tool#	Plan Code	Accep Qty	ot Reje Qty		Reject Number	Insp. Stamp
150 *150* HandFXtube		Crosstubes Chemical Co	nversion		0.00		ME			1	2/2	2/20	P
Hand Finishing Cross 160 *160* QC Quality Control	sstubes	QC3- Inspect Part Finish Memo			0.00	(2)27	s relos	0)					

170

QC5- Inspect part completeness to step on W/O

0.00

Memo

Telata Sologloj (a)

Quality Control

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W/O:			WC	RK ORDER CHANC	SES				
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		Description of NC		Corrective Action Sec	tion B	Val	rification	Approval	Approval
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sig Da	n&∣ _S	ection C	Chief Eng	QC Inspector

Work Order ID 75664 *75664* Page 5 October-27-11 2:46:30 PM D407-667-205 Accept - Item ID: *N900040100* Setup Start **Revision ID:** Crosstube Aft Item Name: Start Qty: 1.00 **Start Date:** 27/10/2011 **Cust Item ID: Required Date:** 11/11/2011 Req'd Qty: 1.00 **Customer:** Reference: Run Process Plan: Date: Tooling: Approvals: Date: QC: ___ Date: SPC (Y/N): Date:____ Sequence ID/ **Operation** Set Up/ Tool ID Tool # Plan Reject Reject Accept Insp. **Work Center ID Description** Code Qty Qty Number Stamp **Run Hours** 180 Outsource process - NDT per OSI038 4.1 0.00 \$ 12-03-2 *180* Outsource2 0.00 Memo Liquid Penetrant Inspection as per QSI 0380 Issue P/O: LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order Outsource process - NDT 190 0.00 Packaging *100* Packaging Memo

200

QC5- Inspect part completeness to step on W/O

Ensure copy of NDT results attached to work order.

200

Packaging

6,1103/05

Quality Control

Memo

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DATE	STEP	PRO	CEDURE C	HANGE	Ву	Date	Qty c	pproval hief Eng / Prod Mgr	Approval QC Inspector
									
Part No	: <u>D</u> 406	-667 -705 PAR #:	Fault Ca	ategory: Lanui Gear/Cous	NCR: Yes	No DQA:	ANT.	Date: /	1 orl 20
-17-1 :	75 R	esolution: <u>fe wxl</u>	Disposi	tion: <u>le werl</u>	QA: N/C CI	osed:	s/	Date: <u>[2</u>	1/1/
NCR:		, , , , , , , , , , , , , , , , , , ,	VORK OR	DER NON-CONFORMAN	CE (NCF	3)		,	
DATE	STEP	Description of NC Section A	Initial Chief Eng	Corrective Action Section Action Description	Sign 8	Verificat Section		oproval hief Eng	Approval QC Inspector
zlislos	世 150	tuhe has inocitin Fours at NOT inspection Q.L. Process	Chief Eng 12.03.03 OSIUM	Chief Eng Grinn out Marks The mai Alosine is Pez as 200. The not take	Date JW 12.5	3 Z 6 %	n	03.65	2/03/05
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Work Order ID 75664 *75664* Page 6 October-27-11 2:46:30 PM *N900040100* Setup Start Accept D407-667-205 - Item ID: **Revision ID:** Crosstube Aft Item Name: *1* Start Qty: 1.00 Cust Item ID: 27/10/2011 **Start Date: Required Date:** 11/11/2011 Req'd Qty: 1.00 **Customer:** Reference: Run Process Plan: Date: Tooling: Date: Approvals: Stop SPC (Y/N): QC: _____ Date: ____ Date: **Tool ID** Tool # Plan Accept Reject Reject Insp. Sequence ID/ Set Up/ Operation Qty Qty Number Stamp Code **Work Center ID** Description **Run Hours** 0.00 210 SprayPaint 12-3-7 *210* 0.00 SprayPaint Memo ***Mask underside of crosstube as shown*** **Spray Painting** 1-Prime inside and outside crosstube as per DEO D407-667-245 and QSI 005 4.2 2-Paint outside crosstube with White Imron as per QSI 005 4.2 PRIME: Start Time: 7.30 Fininsh Time: 8120 A2 12-38-6 PAINT: Start Time: 8:00 Finish Time: 9:00 Ad 12-3-7

220

QC14- Inspect Spray Paint

0.00

220

Memo

0.00

50103/08

Quality Control

Then, Wrap in plastic bag to protect from scratches

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W/O:			W	ORK ORDER CHANGES					
DATE	STEP	PRO	OCEDURE CHA	ANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval •
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		Description of NC		Corrective Action Section 6		Verific	cation	Approval	Approval
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign 8 Date	Sect	ion C	Chief Eng	QC Inspector
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with 41058 wash 'n' wipe

3-Install support with Scotch-Weld DP460 and install clamps as per DEO Dwg D407-667-245 using installaition jig DT9025. Torque clampsas per dwg

A/R Scotch-Weld DP460 Batch: 120 378
EXP: 14 Mar 2013

4-Install nut plates as per Dwg D407-667-245. Touch-up rivet heads with Imron paint.

240

QC5- Inspect part completeness to step on W/O

0.00

240 OC

Memo

Quality Control

12 . 3- 22 (1)

0.00

Page 7

Insp.

Stamp

Part No:PAR #:Fault Category:NCR: Yes No DQA:Date:	Dail Aciospac	<i>y</i>					
Part No:	W/O:		WORK ORDER CHA	ANGES			
Resolution: Disposition: QA: N/C Closed: Date: NCR: WORK ORDER NON-CONFORMANCE (NCR) Corrective Action Section B Verification Approval	DATE STEP	PR	OCEDURE CHANGE	Ву	Date Qty	Chief Eng /	Approval QC Inspector
Resolution: Disposition: QA: N/C Closed: Date: NCR: WORK ORDER NON-CONFORMANCE (NCR) Corrective Action Section B Verification Approval							
Resolution: Disposition: QA: N/C Closed: Date: NCR: WORK ORDER NON-CONFORMANCE (NCR) Corrective Action Section B Verification Approval							
Resolution: Disposition: QA: N/C Closed: Date: NCR: WORK ORDER NON-CONFORMANCE (NCR) Corrective Action Section B Verification Approval							
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NCR: WORK ORDER NON-CONFORMANCE (NCR) Corrective Action Section B Verification Approval App	Part No:	PAR #:	Fault Category:	NCR: Yes N	10 DQA:	Date: _	
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Section A Initial Action Description Sign & Section C Chief Eng QC In Chief Eng Chief	DATE STEP	Section A	Initial Action Descript Chief Eng Chief Eng	tion Sign & Date	Section C	Chief Eng	QC Inspector
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Work Order ID 75664 *75664* Page 8 October-27-11 2:46:30 PM *N900040100* · Item ID: D407-667-205 Accept Setup Start **Revision ID:** Item Name: Crosstube Aft 27/10/2011 Start Qty: 1.00 **Start Date: Cust Item ID: Req'd Qty:** 1.00 **Required Date:** 11/11/2011 **Customer:** Reference: Run Process Plan: Date: _____ Tooling: Date: **Approvals:** SPC (Y/N): Date: Date: Reject Reject Operation Set Up/ Tool ID Tool # Plan Accept Insp. Sequence ID/ Qty Description Code Qty Number Stamp Work Center ID **Run Hours** Pick Kit 0.00 250 *250* Packaging 0.00 Memo Packaging 260 QC4-100% Inspect kits for completeness 0.00 *260* 0.00 Memo **Quality Control** 0.00 270 Packaging *270*

0.00

Meme

Identify and in kanban rack

Packaging

Packaging

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Work Ord October-27-11	der ID 75	664		*756	664*				Page 9
Item ID: Revision ID: Item Name:	D407-667-20 Crosstube Aft			Accept	*N900040	1100*	Setup	Start Stop	*NS1* *NS2*
Start Date: Required Date Reference:	27/10/2011 e: 11/11/2011	Start Qty: 1.00 Req'd Qty: 1.00	*1* *1*		Cust Item ID: Customer:				
Approvals:	Process Pla	n:	Date:	Tooling: SPC (Y/N):	Date:	· 	Run	Start Stop	*NR1* *NR2*
Sequence ID/ Work Center 280 *280* QC Quality Control	ID	Operation Description QC21- Final Inspection Memo	· Work Order Release	Set Up/ Run Hours 0.00	Tool ID Tool #	Plan Acce Code Qty	Qty	2/3	Reject Insp. Number Stamp 3 26

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Work Order ID: 75664

75664

Parent Item:

D407-667-205

D407-667-205

Parent Item Name:

Crosstube Aft

Start Date: 27/10/2011

Required Date: 11/11/2011

Page 1

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:C 05.09.02 Add holes for compatibility with Bell SkidtubesKJ/JLM

IPP Rev:D Added Magnobond, Rubber Cushion & Clamps

07-02-19

JLM

****CHANGE TO CHG 005 - IF USING D2894-1 B35578 OR GREATER**** IPP Rev:E 08-05-22 add comment in seq. 6 and QC15 and QC5 DD verified

by:EC

IPP Rev:F 08-06-12 add comment in seq. 24 DD verified by:EC

IPP Rev:G 08-08-19 revE as per dwg DD verified by:EC

IPP Rev H 09.01.06 ECN 08-562 EC verified by:DD IPP Rev:I 10.04.07 revise route seq. in bom DD verified by:JLM IPP Rev J 11.04.26

removed abrasion strip ecn 11-551 EC verified

by:DD

IPP REV:K

11.10.03 DEO D407-667-245-F-2 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Stat Issued
D407-667-205TRN		Manufactured	No	B7610		110	Each	0.0000		1 .	Ju	12-02-2
D407-667 Crosstube Turning Detail	7-205TF	RN		D-010	5				**		JW	
AN960JD516	NAS1149D0563J	Purchased	No			230	Each	0.0000	18	18		1
AN960.10)516								**	MIIS	3614	H
D2873-043		Manufactured	No			230	Each	20.0000	2	2		,
D2873-04 Nut Plate Assembly	4 3								**		AQ	12-3-14
				Location		Loc C	Otv	Loc Code				

Location	<u>n</u>	Loc Qty	Loc Code	
LG		2		
	72644	2		
LG052	80228	18		<u> </u>
	73605	18		

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	Re	solution:	Disposition):	QA: N/C CI	osed:	Date: _	
NCR:			WORK ORDE	R NON-CONFORMA	NCE (NCF	R)		
		Description of NC		Corrective Action Section		Verification	Approval	Approval
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign 8 Date	Section C	Chief Eng	QC Inspector

October-27-11 2:46:34 PM

Work Order ID: 75664 *75664* Parent Item: D407-667-205 *D407-667-205* Parent Item Name: Crosstube Aft **Required Date:** 11/11/2011 Start Date: 27/10/2011 Start Qty: 1.00 Required Qty: 1.00 D2873-045 Manufactured 230 Each 13.0000 2 *D2873-045* ** AB 12-3-14 Nut Plate Assembly Location Loc Qty Loc Code LG052 80162 13 73529 13 D2894-1 Manufactured 230 Each 5.0000 No Al 12-3-14 ** 2.750 Support Location Loc Qty Loc Code LG052 5 74464 D3190-1 Manufactured No 230 Each 38.0000 ** AR 12-3-14

Chafing Shield

Location Loc Qty LG 72247 3 LG055 35 35

Loc Code

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	Re	solution:	Dispositi	on:	QA: N/C C	osed:	Date: _	
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Picklist Print October-27-11 2:46:34 PM									Page 3
Work Order ID: 75664		*7	5664*						
Parent Item: D407-667-205			407-667-2	∩ 5*					
Parent Item Name: Crosstube Aft		1 4	14()/-()()/-/	(7;)		s	tart Date: 2	27/10/2011	Required Date: 11/11/2011
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D3595-063-450	Manufactured	No		230	Each	105.5600		2	
D3595-063-450	*						**		A 12-3-14
RUBBER CUSHION			77678 Location	Lo	oc Oty	Loc Code		Q)	
			LG 67353		95.76 3				_
			68893		6				
			70113		0.56				-
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MS20601-AD4W8	Purchased	No		230	Each	249.0000	14	14	_
*MS20601-AD4W	/ 8 *						**		AL 12-3-14
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Clamp(per MIL-DTL-8783C)			سراه م اورا				****	<u> </u>	# 12-3-14
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Page 3

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Picklist Print •October-27-11 2:46:34 PM										Page 4
Work Order ID: 75664		*7	5664	*						
Parent Item: D407-667-205 Parent Item Name: Crosstube Aft		*[)407-6	367-20	75*				27/10/2011	Required Date: 11/11/2011
M621020 25	D 1 1	NI.			220	F 1		Start Qty:		Required Qty: 1.00
*M\$21920-25 *M\$21920-25* Clamp(per MIL-DTL-8783C)	Purchased	No	is is	20475 20054	230	Each	88.0000	2 **	2 (i)	Al 12-3-14
			Location	•	<u>La</u>	e Oty	Loc Code		U	
			1 1 1	13281 13282 18142 18183 19339		82 0 0 4 28 50				
				16264 17998		6 2 4				
*AN5-10A *AN5-10A*	Purchased	No	1	17998	250	Each	130.0000	10 **	10 M1	120630
			Location		<u>Lo</u>	c Oty	Loc Code			
			1 1	16704 17872 18191 18983		130 13 8 59 50				
AN5-32A *AN5-32A* Bolt	Purchased	No	ı	10903	250	Each	223.0000	4 **	12/3/2	22
			Location		Lo	e Oty	Loc Code			. /
			1 1	18422 18628 18983 19328		223 48 50 25 100			<u></u>	- - - -

Shop Packet Print

Page 4

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Dan Ae	rospace	Liu							~
W/O:			WO	RK ORDER CHANG	ES				
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						Auto Arrivo			
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	Re	esolution:	Disposition	:	_ QA: N/C CI	osed:		Date: _	
NCR:		\	WORK ORDE	R NON-CONFORM	ANCE (NCF	R)			
	0750	Description of NC			ion B	Verifi	cation	Approval	Approval
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign 8 Date	Sect	ion C	Chief Eng	QC Inspector
		\							
		, .						(
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Work Order ID: 75664

Parent Item:

D407-667-205

Parent Item Name: Crosstube Aft

75664

D407-667-205

Start Date: 27/10/2011

Required Date: 11/11/2011

Required Qty: 1.00

Start Qty: 1.00

AN5-34A

Purchased

Purchased

No

No

250

Each

76.0000

Loc Code

**

Loc Qty Location ST339 76 46 117794 30 119328 250 Each

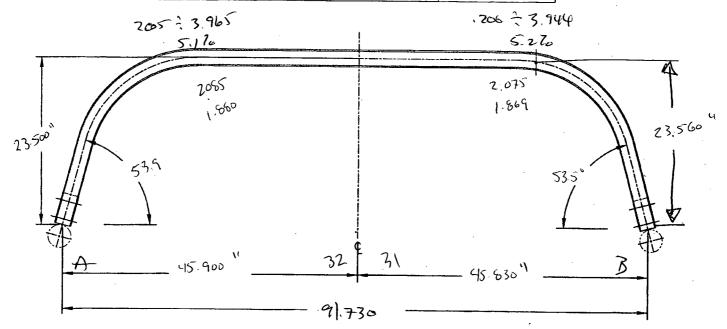
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Location Loc Oty Loc Code ST300 994 116105 5 116548 53 117441 66 117611 74 118179 496 118910 300 ST518 1500 1500 119109

W/O:	rospace Lt		W	ORK ORDER CHANG	ES		 			<u> </u>
DATE	STEP	PRO	ANGE		Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approva QC Inspector	
Part No	:	PAR #:	Fault Cat	egory:	NCF	R: Yes	No DQ	 A:	Date:	
		olution:								
NCR:			WORK ORI	DER NON-CONFORMA	NCE	(NCR)			
DATE	STEP	Description of NC Section A	Initial Chief Eng	Corrective Action Section Action Description Chief Eng	on B	Sign & Date		cation ion C	Approval Chief Eng	Approval QC Inspector
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DART AEROSPACE LTD	Work Order:	75664		
Description: Crosstube High Aft (407)	Part Number:	D407-667-205		
Inspection Dwg: D407-667-245 Rev: F		Page 1 of 1		

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	45.79	46.05
Angle	54	56
Total Span	91.58	92,100



	Comments
Sine A = 5.1%	crushy W 37 Passe
Sire B 25.27	crushy (W 37 Passe
QC15 Inspection	
Date	

Rev	Date	Change	Revised by Approve
Α	07.02.06	New Issue	KJ/JM
В	09.06.22	Dwg Rev updated	KJ
С	11.08.22	Dimensions updated	KJ 1/
D	11.09.30	Dimensions updated	KJ CX PE

W/O:			WO	RK ORDER CHANG	ES	• • • • • •			
DATE	STEP	PR	OCEDURE CHAN	IGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Resolution:			Disposition: QA			Closed:		Date:	
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DATE	STEP	Description of NC Section A	Initial	Action Description	Sign	& Secti			

lte m	QTY -245	PART NUMBER	DESCRIPTION
1	Х	D407-667-245	CROSSTUBE ASSEMBLY (407 HIGH AFT)
2_	1	D6011-115	CROSSTUBE
3	2	D2856-400-773	ABRASION STRIP
4	2	D2873-043	NUT PLATE
5	2	D2873-045	NUT PLATE
6	1	D2894-1	SUPPORT
7	2	D3190-1	CHAFING SHIELD
8	2	D3595-063-430	RUBBER CUSHION
9	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
10	4	MS21920-22	CLAMP
11	2	MS21920-25	CLAMP (OR MS21920-24)
12	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947- 100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

1) MATERIAL: MANUFACTURED FROM D6011-115

FINISHED LENGTH = 112.91±0.020

2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2 PAINT OUTSIDE PER DART QSI 005 4.2

- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
 IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-245" AND BATCH NUMBER ON
- INSIDE OF CUFF USING VIBRATING STYLUS.
- WEIGHT: 27.7 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE.
 RUN-OFF PART, BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE TO
- BENDING IS 6% BASED ON O.D.

 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.

 12) INSTALL D2894-1 CENTER SUPPORT ÚSING A 0.03* TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-25 CLAMPS WITH D3595-063-430 RUBBER CUSHIONS TO SECURE D2894-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE
- SUPPORT.

 NOTE: MS21920-24 CLAMPS CAN BE ÜSED TO ACCOMMODATE VARYING DIAMETERS.
 ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.

 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) INSTALL D2856-400-773 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE, PER QSI 035.
- 16) INSTALL D3190-1 CHAFING SHIELDS SO THAT OVERLAP IS ON BOTTOM SIDE OF CROSSTUBE OPPOSITE D2894-1 SUPPORT.
- 17) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

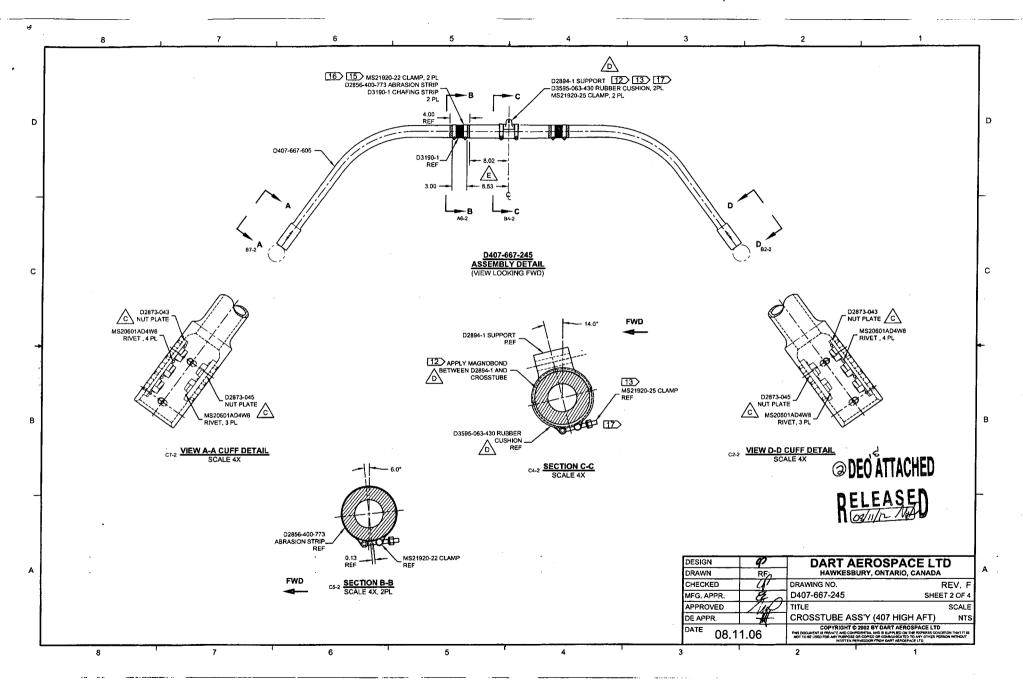
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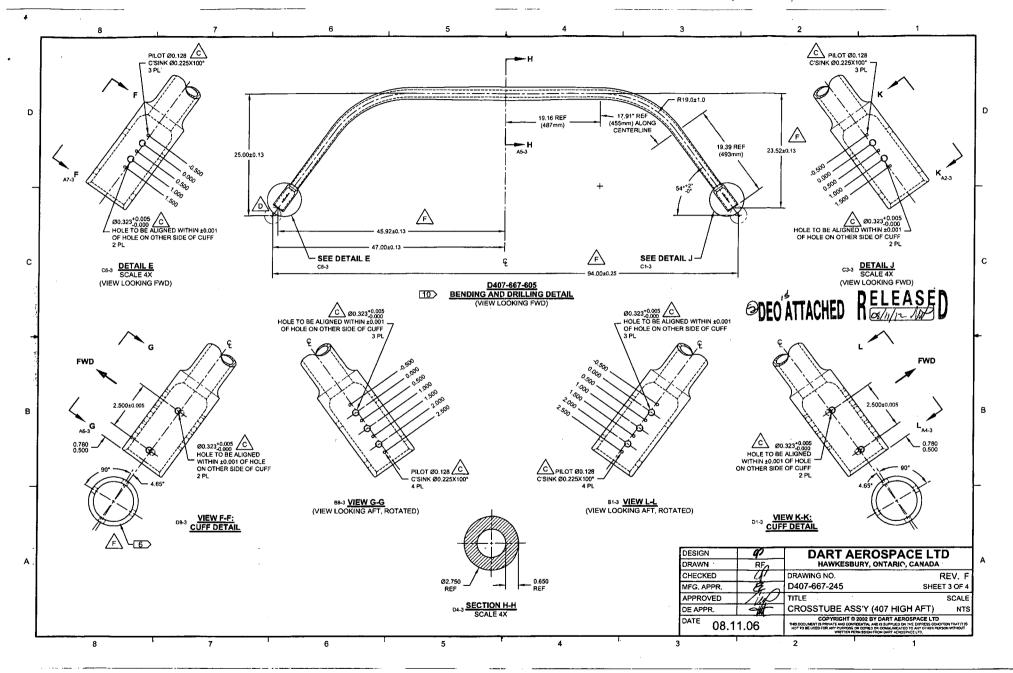
F	REFORMAT NOTES TO NEW STANDARDS (ZN B8-1): RELOCATED FLAG # 6 (ZN A8-3) PER NCR 210; REMOVED REF. & ADD TOLERANCES (ZN C6-3, C4-3 & D2-3)	RF	08.11.06
E	8.02 AND 8.53 WERE 8.40 AND 8.90 (ZN D5-2); REORGANIZED VIEWS AND REFORMATED DRAWING TO CURRENT STANDARDS. REASONS: CLAMPS MOVED 0.375 TOWARD CL TO ELIMINATE INTERFERENCE WITH AIRCRAFT MOUNTS. REFERENCE: PAR#08-21 AND ECN#1225	мв	08.07.24
D	ADD VIEW FOR OEM SKID HOLES, ROTATE ORIENTATION OF CLAMPS SECTION F-F, REMOVE -851 ABRASION STRIP, ADD MAGNOBOND 6398, ADD CUSHION	PH	07.02.07
С	ADD HOLES AND NUT PLATES FOR COMPATIBILITY WITH BHT/AA SKIDTUBES	PH	05.07.26
В	ADD CHAFING SHIELD	CP	03.05.21
Α	NEW ISSUE	CP	02.05.13
REV.	DESCRIPTION	BY	DATE

DESIGN	4'	J DAKTAEKUSPACE LI	טו
DRAWN	RF,	HAWKESBURY, ONTARIO, CANADA	
CHECKED	a	DRAWING NO.	REV. F
MFG. APPR.	8	D407-667-245 SHE	ET 1 OF 4
APPROVED	111	TITLE	SCALE
DE APPR.	-74-	CROSSTUBE ASSY (407 HIGH AFT)	NTS
DATE 08.1	1.06	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS COCUMENT IS PROVIDED THE CONTROL OF THE UNIT OF HE USED FOR ANY PURPOSE FOR COPIES OF COMMANDATED TO ANY OTHER PER	SITI TANT MORTIC

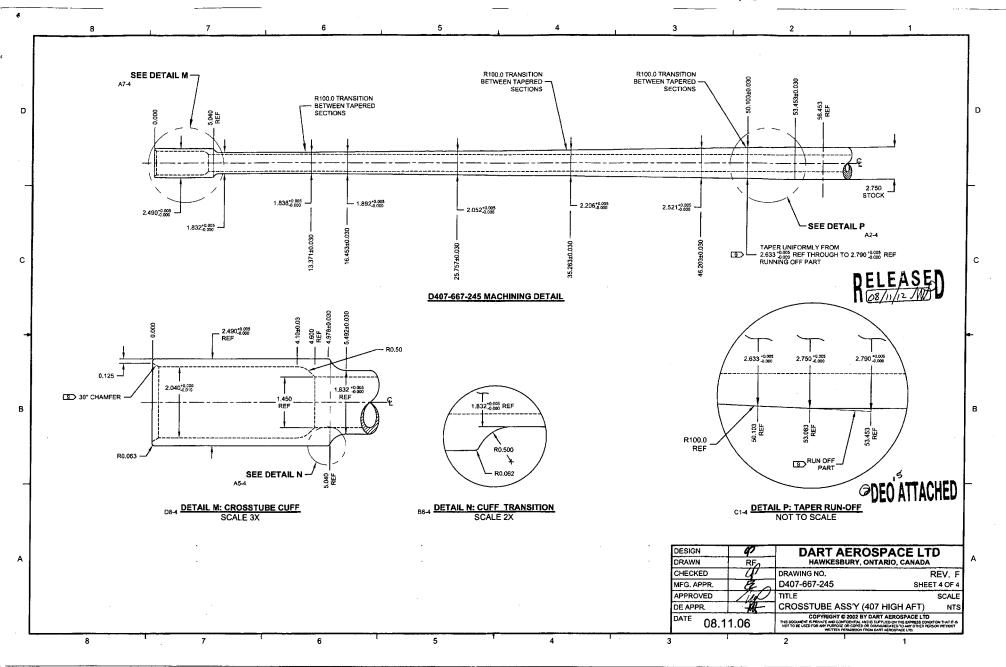
Dart Ae	rospac	e Ltd							
W/O:			WC	RK ORDER CHANGI	ES				**
DATE	STEP	PRO	PROCEDURE CHANGE					Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Part No: PAR #:		PAR #:	Fault Categ	gory:	NCR: Yes	No DQA		_ Date: _	
			Disposition: QA: N/C Closed: Date:						
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DATE	SIEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign 8 Date	Section		Approval Chief Eng	Approval QC Inspector



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		L								
Part No:		PAR #:	Fault Cate	egory:	NCF	R: Yes I	No DQ	A:	_ Date: _	
	R	esolution:	Disposition	on:	QA:	N/C Clo	sed:		Date:	
NCR:		V	VORK ORE	ER NON-CONFO	RMANCE	(NCR)			
DATE	STEP	Description of NC Section A	Initial	Corrective Action Action Descrip	Section B	Sign &	Verific Section		Approval Chief Eng	Approval QC Inspector
			Chief Eng	Chief Eng		Date				
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DATE	STEP	Description of NC Section A	Initial	Corrective Action Section Action Description	Sign &	Verific Section		Approval Chief Eng	Approval QC Inspector
			Chief Eng	Chief Eng	Date				

DRAWING NO	1		REV. F	DART AE	ROSPACE LT	Γ D D.E.O. N	10.	SHEET NO.	SCALE
D407-667-	245 CROS	STUBE ASSY (40		ENGINE	ERING ORDE	R D407-6	667-245-F-1	SHEET 1 OF 2	NTS
DRAWN		CHECKED	q)	MFG. APPR.	B.	APPROVED	140	DE APPR.	·
DATE	11.04.08	DATE	11.04.12	DATE	11.04.12	DATE	11.04.12	DATE 11-04-12	

PURPOSE:

REMOVED ABRASION STRIP IN FAVOR OF A THIN LAYER OF PROSEAL 890.

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

IS:

item	Qty -245	Part Number	Description
3	0	D2856-400-773	ABRASION STRIP

WAS:

3	2	D2856-400-773	ABRASION STRIP

NOTES 2 AND 15, SHEET 1 ARE AMENDED AS FOLLOWS:

IS:

2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
MASK UNDERSIDE OF CROSSTUBE AS SHOWN (HATCHED AREA) AND
PAINT OUTSIDE PER DART QSI 005 4.2
REMOVE MASKING AND APPLY CLEAR COAT

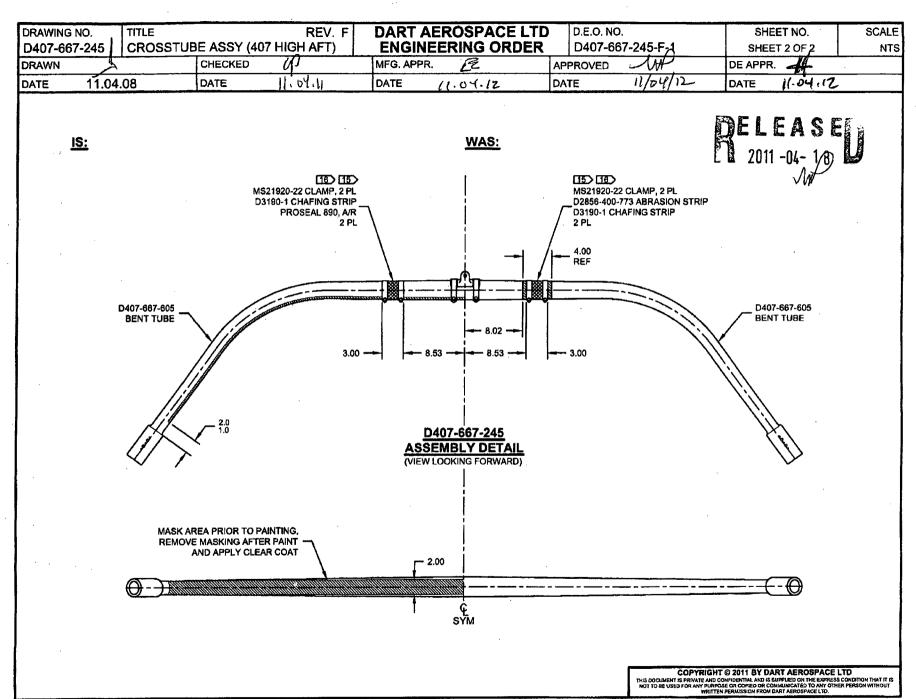
15) APPLY A THIN COAT OF PROSEAL 890 ON INSIDE CONCAVE SURFACE OF D3190-1 CHAFING SHIELDS AND LET CURE PER MANUFACTURER'S INSTRUCTIONS. INSTALL PROSEALED D3190-1 CHAFING SHIELDS ONTO CROSSTUBE BY APPLYING A THIN COAT OF PROSEAL 890 ONTO CROSSTUBE. BE SURE TO ELIMINATE ANY AIR GAPS.

WAS:

- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
 PAINT OUTSIDE PER DART QSI 005 4.2
- 15) INSTALL D2856-400-773 ABRASION STRIP WITH A 0.13 REF GAP ON BOTTOM SIDE OF CROSSTUBE PER QSI 035.



W/O:			WC	RK ORDER CHANG	GES					<u> </u>			
DATE	STEP	PR	OCEDURE CHA	NGE		By Date Qty Chief En			Approval Chief Eng / Prod Mgr	Approval QC Inspector			
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Part No								DQA: Date:					
,	Re	solution:							Date:				
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DATE	STEP	Description of NC	Corrective Action Se			C: 0		Verification	Approval	Approva			
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W/O:		*** *** **** *************************	W	ORK ORDER CH	ANGES					
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· · · · · · · · · · · · · · · · · · ·	Res	olution:							Date:	
NCR:			WORK ORD	ER NON-CONFO	RMANCE	(NCR)			
DATE STEP		Description of NC		Corrective Action	Section B		Verifica	tion	Approval	Approval
		Section A	Initial Chief Eng	Action Descript Chief Eng	tion 	Sign & Date	Section		Chief Eng	QC Inspector
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NOTE: D	ate & initial a	all entries								

DRAWING I	NO. TITLE		REV. F	DART AE	ROSPACE LTD	D.E.O. NO.	SHEET NO.	SCALE
D407-667	7-245 CROSST	UBE ASS'Y (407	HIGH AFT)	ENGINE	ERING ORDER	D407-667-245-E-2	SHEET 1 OF	NTS
DRAWN	q?	CHECKED	<u>S</u>	MFG. APPR.	Œ	APPROVED W	DE APPR.	
DATE	11.09.07	DATE //	109.19	DATE	11-09-19	DATE 11.08.19	DATE 11.09.19	

PURPOSE:

REPLACE MAGNOBOND WITH 3M DP460 SCOTCH-WELD EPOXY ADHESIVE

CHANGE:

IS:

Item	Qty -245	Part Number	Description
12	A/R	SCOTCH-WELD DP460	EPOXY ADHESIVE, 3M SCOTCH-WELD

WAS:

12	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023
ļ			ADHESIVE (TEXTRON/BELL SPEC. 299-947-100,
ł			TYPE II, CLASS 2 ADHESIVE)

NOTE 12 & 17, SHEET 1 IS AMENDED AS FOLLOWS:

- 12) INSTALL D2894-1 CENTER SUPPORT USING A 0.04" TO 0.07" THICK LAYER OF SCOTCH-WELD DP460 PER QSI 015. LET CURE FOR 24 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER ADHESIVE HAS CURED FOR 24 HOURS.

WAS:

- 12) INSTALL D2894-1 CENTER SUPPORT USING A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.



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Dart Aerospace Ltd	D	art	Aeros	pace	Ltd
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W/O:	-	WORK ORDER CHANGES									
DATE	STEP	PRO	CEDURE C		Ву	Date Qt	Approval Chief Eng / Prod Mgr	Approval QC Inspector			
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Part No	•	PAR #:	_ Fault Ca	ategory:	NCR: Yes	No DQA:	 Date: _				
P**	Re	esolution:	_ Disposi	tion:	QA: N/C Cld	QA: N/C Closed: Date:					
NCR:		W	ORK OR	DER NON-CONFORM	IANCE (NCR)					
DATE	STEP	Description of NC		, ·	ction B	Verification	Approval	Approval			
		Section A	Initial Chief Eng	Action Description Chief Eng	Sign & Date	Section C	Chief Eng	QC Inspector			
			500								

Change Record

Part Number D407-667-205
Description 407 AFF CROSS FUBE

Page _ l of _ l

Relevant Documents Relevant Rele	Cha	Data	1.0	
802 03.05.21 05 PER NR-PING-667 REV. F 103 05.09.10 K3 DR-D206-667 REV. H (2001 certificity) 204 07.02.14 K1 DR-D206-667 REV. L/MOX-D226-667 REV. E 205 07.11.07 KB DR-D206-667 REV. F (D3894 REV. C) 206 08.08.18 KB D407-667-245 REV. E (BCW 1225) 207 11.04. P1 B DS19550 REV. A. DED-D407-667-F-1 (ECW 11-55) 208 11.09.29 KT DE-D-D407-667-245-F-2 (ECW 11-643)	Chg.	Date	Ву	Relevant Documents
602 03.05.21 D5 PER DR-D726-667 Rev. F 103 05.09.09 PT DR-D206-667 Rev. H (new completions) Oct 07.02 PT DR-D206-667 Rev. L (MD1-D226-667 Rev. E 005 07.11.07 DR-D206-667 Rev. E (D2894 Rev. C) 006 08.08.18 DH07-667-245 Rev. E (RCW 1225) 007 11.04 PT D519550 Rev A DBD-D407-667-F1 (ECN 11-551) 008 11.09.29 DS19574 Rev. A D2894 Rev. E DE0-D407-667-245-F-2 (ECN 11-643)	001	02.06.04	91	BOR DR-0206-667 REV. E
DOS 05.09.12 H3 DR-D206-667 Rev. H (2220 CHOT Rev. E) DOS 07.11.07 DR-D206-667 Rev. F (D 2-894 Rev. C) DOS 07.11.07 DR-D206-667 Rev. F (D 2-894 Rev. C) DOS 08.08.18 DH07-667-245 Rev. E (ECW 1225) DOT 11.04.8 DS19550 Rev. A, DED-D407-667-651) DOB 11.09.29 DS19574 Rev. A, D 2894 Rev. E DEO-D1407-667-245-F-2 (ECW 11-643)				
DR-D206-667 Rev. H (Rem containing) DR-D206-667 Rev. L (MD-D206-667 Rev. E DS-D206-667 Rev. F (D3894 Rev. C) DB-D206-667 Rev. F (D3894 Rev. C) DB-D206-6	002	03.05.21	DS	PER DR-0706-667 Rev-F
DE-D206-667 Res. H (REM CAPATIONS) DR-D206-667 Res. E (D2894 Res. E DS-D206-667 Res. E (D2894 Res. C) DR-D206-667 Res. E (D2894 Res. C) DS-D206-667 Res.				
DE 07.02.14 \$\frac{1}{4}\$ DR-D206-667 Rev. F (D2894 Rev. c) DR-D206-667 Rev. F (D2894	103	05.09.09	KS	DR-D206-667 ROW H (25M (2004)
005 07.11.07 DR-D26-667 Rev, F (D 2894 Rev, c) 006 68.08.18 DH07-667-245 Rev, E (ECW 1225) 007 11.04. Pl DS19550 Rev, A, DED-D407-667-F-1 (ECW 11-551) 008 14.09.29 DS19514 Rev, A, D 2894 Rev, E DEO-D407-667-245-F-2 (ECW 11-643)				(ac (Copyr Millions)
D407-667 Rev. F (D2894 Rev. c) D407-667-245 Rev. E (ECW 1225) D519550 Rev. A, DED-D407-667-F-1 (ECN 11-551) D519550 Rev. A, DED-D407-667-F-1 (ECN 11-551) D519550 Rev. A, D2894 Rev. E DEO-D407-667-245-F-2 (ECW (1-643)	004	07.02.14	XI	DR-D206-11-7 ROX 1 /401-D2-1-11-2015
DHO7-667-245 Rev. E (ECN 17225) DHO7-667-245 Rev. E (ECN 17225) DS19550 Rev. A, DED-DHO7-667-F-1 (ECN 11-551) DS19514 Rev. A, D2894 Rev. E DEO-DHO7-6651-245-F-2 (ECN 11-6473)	<u>'</u>		a	
DHO7-667-245 Rev. E (ECN 17225) DHO7-667-245 Rev. E (ECN 17225) DS19550 Rev. A, DED-DHO7-667-F-1 (ECN 11-551) DS19514 Rev. A, D2894 Rev. E DEO-DHO7-6651-245-F-2 (ECN 11-6473)	005	07.11.07	AL.	N 724-1/7 Day 5/7 29911 Page 6
DS19550 & A, DED-DHOT-GUT-F-1 (ECN 11-551) DS19574 Rev. A. D2894 Yev. E DEO-DHOT-GOT-245-F-2 (ECN 11-643)			0	DE-DEE-001 New, 1 (D 2-014 KW, C)
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